

WHAT IS CLAIMED IS:

*Sub A1* >

1. A method for retrieving information from a document collection, the method comprising:
  - converting a user query into at least two logical form triples;
  - generating a compound logical form query by connecting at least two of the logical form triples with a restrictive operator; and
  - searching an index of the document collection for documents that match the compound logical form query.
2. The method of claim 1 wherein searching an index comprises searching a field in the index that contains entire logical form triples.
3. The method of claim 1 wherein converting a user query comprises identifying a query type from the user query and generating a logical form triple based on the query type.
4. The method of claim 1 wherein generating a compound logical form query comprises:
  - determining a score for each logical form triple;
  - combining the scores for each logical form triple to form a total score; and
  - generating the compound logical form query based in part on the total score.

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5. The method of claim 4 wherein determining a score for each logical form triple comprises determining a score based on properties of words associated with a logical form triple.

6. The method of claim 4 wherein determining a score for a logical form triple comprises determining a score based on a linguistic type associated with the logical form triple.

7. The method of claim 4 wherein generating the compound logical form query based in part on the total score comprises:

determining that the total score is relatively low; and

based on the relatively low total score, using restrictive operators between each logical form triple in the compound logical form query.

8. The method of claim 4 wherein generating the compound logical form query based in part on the total score comprises:

determining that the total score is relatively high; and

based on the relatively high total score, constructing the compound logical form query so that it is not overly restrictive.

9. The method of claim 8 wherein constructing the compound logical form query so that it is not overly restrictive comprises constructing the compound logical form query to allow fuzzy matching of at least one logical form triple.

10. The method of claim 8 wherein constructing the compound logical form query so that it is not overly restrictive comprises placing a non-restrictive operator between at least two logical form triples in the compound logical form query.

11. The method of claim 8 wherein constructing the compound logical form query so that it is not overly restrictive comprises constructing the compound logical form query using only some of the logical form triples formed from the user query.

12. The method of claim 1 wherein searching the index produces a set of logical-based search results and wherein the method of retrieving information further comprises:

searching a word index of the document collection for documents that match words in the user query to produce a set of word-based search results; and intersecting the logical-based search results with the word-based search results to form a filtered set of search results.

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13. A method of retrieving information from a document collection, the method comprising:

generating a compound logical form query from a user query, the compound logical form query having at least two logical form triples connected by a restrictive operator;

applying the compound logical form query to a logical form triple index of a document collection to form a set of logic-based search results;

generating a word query based on words in the user query;

applying the word query to a word index of the document collection to form a set of word-based search results; and

intersecting the logic-based search results with the word-based search results to form a set of filtered compound results.

14. The method of claim 13 wherein generating a compound logical form query comprises:

determining the restrictiveness of a set of logical form triples identified from the user query; and

combining logical form triples so as to limit the restrictiveness of the compound logical form query formed from the set of logical form triples.

15. The method of claim 13 wherein generating a word query comprises identifying important words in the user query and placing the important words in the word query.

16. The method of claim 13 further comprising:  
generating a standard logical form triple query by connecting a set of logical form triples with non-restrictive operators;  
applying the standard logical form triple query to the logical form triple index of the document collection to form a second set of logic-based search results; and  
intersecting the word-based search results with the second set of logic-based search results to form a set of filtered standard results.

17. The method of claim 16 further comprising returning the filtered compound results and the filtered standard results to the user with the filtered compound results ranked higher than the filtered standard results.

18. The method of claim 16 further comprising:  
generating a second word query based on words in the user query;

applying the second word query to the word index to form a second set of word-based search results; and intersecting the second set of word-based search results with the filtered standard results to form further filtered standard results.

19. The method of claim 18 further comprising returning the filtered compound results, the further filtered standard results and the filtered standard results to the user with the filtered compound results ranked above the further filtered standard results and the further filtered standard results ranked above the filtered standard results.

20. A computer-readable medium having computer-executable instructions for performing information retrieval steps comprising:

performing a logic-based search of a document collection using logical form triples created from a user query to create logic-based search results;

performing a word-based search of the document collection using words taken from the user query to create word-based search results; and

intersecting the logic-based search results and the word-based search results to form filtered search results.

21. The computer-readable medium of claim 20 wherein performing a word-based search comprises identifying important words in the user query and using only the important words in the word-based search.

22. The computer-readable medium of claim 21 wherein performing a logic-based search comprises:

forming a compound logical form query by identifying at least two logical form triples from the user query and connecting at least two of the logical form triples with a restrictive operator; and

using the compound logical form query to search the document collection.

23. The computer-readable medium of claim 22 wherein the information retrieval steps further comprise:

performing a standard logic-based search of the document collection by identifying at least two logical form triples from the user query, connecting each of the identified logical form triples together using non-restrictive operators to form a standard logical form triple query, and searching the document collection using the standard logical form triple query to form

standard logic-based search results;  
and

intersecting the standard logic-based  
search results with the word-based  
search results to form filtered  
standard search results.

24. The computer-readable medium of claim 23  
wherein the information retrieval steps further  
comprise returning the filtered search results and  
the filtered standard search results to the user with  
the filtered search results ranked higher than the  
filtered standard search results.

25. The computer-readable medium of claim 23  
wherein the information retrieval steps further  
comprise:

performing a second word-based search of  
the document collection to form second  
word-based search results; and  
intersecting the second word-based search  
results with the filtered standard  
search results to form further  
filtered standard search results.

26. The computer-readable medium of claim 25  
wherein the information retrieval steps further  
comprise returning the filtered search results, the  
filtered standard search results, and the further  
filtered standard search results to the user with the  
filtered search results ranked higher than the

further filtered standard search results and the further filtered standard search results ranked higher than the filtered standard search results.